

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**  
MISSOURI CLEAN WATER COMMISSION



**MISSOURI STATE OPERATING PERMIT**

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No. MO-0049522

Owner: City of Springfield  
Address: P.O. Box 8368, Springfield, MO 65801

Continuing Authority: Same as above  
Address: Same as above

Facility Name: Springfield Southwest Wastewater Treatment Plant  
Facility Address: 3301 South Highway FF, Springfield, MO 65807

Legal Description: NE¼, NE¼, Sec. 07, T28N, R22W, Greene County  
Receiving Stream: Wilson Creek (P) 303(d)  
First Classified Stream and ID: Wilson Creek (P) (02375) 303(d)  
USGS Basin & Sub-watershed No.: (11010002-020001)

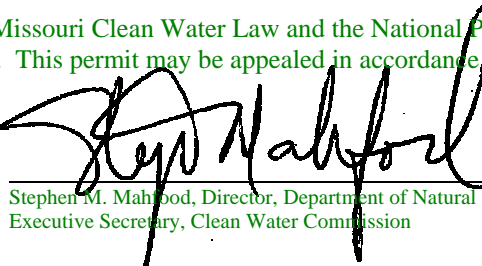
is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

**FACILITY DESCRIPTION**

See page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

August 9, 2002      July 8, 2004  
Effective Date      (Revised)

  
Stephen M. Mahood, Director, Department of Natural Resources  
Executive Secretary, Clean Water Commission

August 8, 2007  
Expiration Date

\_\_\_\_\_  
R. Bruce Martin, Director, Southwest Regional Office

FACILITY DESCRIPTION (continued)

Outfall #001 – POTW – SIC #4952

Consists of two trains:

- (1) an extended air plant
- (2) a two stage plant: the first stage is a Unox pure-oxygen system with intermediate clarifiers, and the second stage is a conventional activated sludge plant for nitrification. Flows from both trains go through ozonation for disinfection. Solids' handling is by gravity belt/DAF thickening and anaerobic digesters; centrifuge thickening or de-watering precedes land-application of the sludge.

Design flow is 42.5 MGD

Design sludge production is 9,000 tons/year.

Outfall #002 – POTW – SIC #4952

42.5 MG of stormwater storage, with a peak-flow clarifier.

Instream Monitoring Point – In Wilson Creek, 50 feet downstream from the confluence of Wilson Creek and South Creek, and upstream of area affected by plant discharge.

Instream Monitoring Point – In Wilson Creek, 600 feet downstream from Outfall #002 and Farm Road 168 Bridge.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 12	
					PERMIT NUMBER MO-0049522	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	once/day	24 hr. total
Biochemical Oxygen Demand <sub>5</sub> **	mg/L		15	10	once/week	24 hr. comp.
Total Suspended Solids**	mg/L		20	15	once/week	24 hr. comp.
pH – Units	SU	***		***	once/week	grab
Fecal Coliform	#/100 ml	1000		400	once/week	grab
Temperature	°C	*		*	once/week	grab
Ammonia as N	mg/L	*	3.0	2.0	once/week	grab
Nitrate & Nitrite as N	mg/L	*		*	once/week	grab
Total Phosphorus as P	mg/L	*		0.5	once/week	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2004</u> .						
Whole Effluent Toxicity (WET Test)	% Survival		See Special Conditions #1		once/quarter****	24 hr. comp.
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2004</u> .						
Total Toxic Organics (Note 1)	µg/L	*		*	once/day	grab
Arsenic, Total Recoverable	µg/L	20		20	once/quarter****	24 hr. comp.
Cadmium, Total Recoverable	µg/L	13		13	once/quarter****	24 hr. comp.
Chromium, Total Recoverable	µg/L	42		42	once/quarter****	24 hr. comp.
Copper, Total Recoverable	µg/L	29		29	once/quarter****	24 hr. comp.
Lead, Total Recoverable	µg/L	20		20	once/quarter****	24 hr. comp.
Mercury, Total Recoverable	µg/L	0.5		0.5	once/quarter****	24 hr. comp.
Nickel Total Recoverable	µg/L	500		500	once/quarter****	24 hr. comp.
Silver, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. comp.
Zinc, Total Recoverable	µg/L	345		345	once/quarter****	24 hr. comp.
Cyanide (Amenable to Chlorination)	µg/L	*****		*****	once/quarter****	24 hr. comp.
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2004</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)					PAGE NUMBER 4 of 12	
					PERMIT NUMBER MO-0049522	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #002</u> (Note 2)						
Flow	MGD	*		*	once/day	24 hr. estimate
Biochemical Oxygen Demand <sub>5</sub> **	mg/L		45		once/week	grab
Total Suspended Solids**	mg/L		45		once/week	grab
pH – Units	SU	***		***	once/week	grab
Temperature	°C	*		*	once/week	grab
Ammonia Nitrogen	mg/L		*	*	once/week	grab
Total Phosphorous	mg/L	*		*	once/week	grab
Dissolved Oxygen	mg/L	*			once/week	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2004</u> .						
Total Toxic Organics (Note 1)	µg/L	*		*	once/day	grab
Arsenic, Total Recoverable	µg/L	20		20	once/quarter****	grab
Cadmium, Total Recoverable	µg/L	13		13	once/quarter****	grab
Chromium, Total Recoverable	µg/L	42		42	once/quarter****	grab
Copper, Total Recoverable	µg/L	29		29	once/quarter****	grab
Lead, Total Recoverable	µg/L	20		20	once/quarter****	grab
Mercury, Total Recoverable	µg/L	0.5		0.5	once/quarter****	grab
Nickel Total Recoverable	µg/L	500		500	once/quarter****	grab
Silver, Total Recoverable	µg/L	*		*	once/quarter****	grab
Zinc, Total Recoverable	µg/L	345		345	once/quarter****	grab
Cyanide (Amenable to Chlorination)	µg/L	*****		*****	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2004</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)					PAGE NUMBER 5 of 12	
					PERMIT NUMBER MO-0049522	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Instream Monitoring</u> (See Facility Description)						
Total Toxic Organics (Note 1)	µg/L	*			once/day	grab
Arsenic, Total Recoverable	µg/L	*			once/quarter****	grab
Cadmium, Total Recoverable	µg/L	*			once/quarter****	grab
Chromium, Total Recoverable	µg/L	*			once/quarter****	grab
Copper, Total Recoverable	µg/L	*			once/quarter****	grab
Lead, Total Recoverable	µg/L	*			once/quarter****	grab
Mercury, Total Recoverable	µg/L	*			once/quarter****	grab
Nickel Total Recoverable	µg/L	*			once/quarter****	grab
Silver, Total Recoverable	µg/L	*			once/quarter****	grab
Zinc, Total Recoverable	µg/L	*			once/quarter****	grab
Cyanide (Amenable to Chlorination)	µg/L	*			once/quarter****	grab
Total Phosphorus	mg/L	*			once/quarter****	grab
Total Kjeldahle Nitrogen	mg/L	*			once/quarter****	grab
Ammonia as N	mg/L	*			once/quarter****	grab
Nitrite & Nitrate as N	mg/L	*			once/quarter****	grab
pH – Unites	SU	*			once/quarter****	grab
Temperature	°C	*			once/quarter****	grab
Stream Flow (Estimate)	cfs	*			once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2004</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- \* Monitoring requirement only.
- \*\* This facility is required to provide a 30-day average percent removal of at least 85%. (All facilities EXCEPT municipal lagoons and trickling filters)
- \*\*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.
- \*\*\*\* Sample once per quarter in the months of **January, April, July, and October**.
- \*\*\*\*\* Compliance with the effluent limitations for Cyanide will be determined by use of the following threshold. A value of “non detection” at the threshold, using the required analytical method, will be considered in compliance. A value over the threshold will be considered an effluent limitation violation.

Note 1 - See Total Toxic Organics, Page 13

Note 2 - Discharge from Outfall #002 (peak flow clarifier) is permitted only when influent flow exceeds the wet weather design treatment flow capacity for treatment works that discharges through Outfall #001.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
  - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - (2) controls any pollutant not limited in the permit.
  - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri’s Water Quality Standards.
  - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri’s list of waters of the state not fully achieving the state’s water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.

C. SPECIAL CONDITIONS (continued)

4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
  - (1) One hundred micrograms per liter (100 µg/L);
  - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
  - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
  - (4) The level established in Part A of the permit by the Director.
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

6. General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

- (a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
- (b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
- (c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
- (d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
- (e) There shall be no significant human health hazard from incidental contact with the water;
- (f) There shall be no acute toxicity to livestock or wildlife watering;
- (g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
- (h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

- (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
- (b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

C. SPECIAL CONDITIONS (continued)

8. Permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference.
9. As required in 40 CFR 122.21 (j) (4) the permittee shall, as part of its renewal application for this permit, submit to the department a written technical evaluation of the need to revise local limits under 40 CFR 403.5 (c) (1).
10. The City shall drain and clean the excess flow clarifier between discharge events.
11. Permittee shall notify the department, in writing, of all system bypasses, including, but not limited to, overflows of the flow control structure and the manhole in the plant bypass line. See Standard Condition, Part I, Section B.5 for additional details.
12. Discharge monitoring reports shall be due no later than the 28<sup>th</sup> day of the month following the completed reporting period.
13. Permittee shall submit to the Department on or before March 31<sup>st</sup> of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:
  - (a) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;
  - (b) A summary of the status of Industrial User compliance over the reporting period;
  - (c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
  - (d) Any other relevant information requested by the Department.
14. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT			
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE
#001	100%	QUARTERLY	24 hr. composite

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a single-dilution test in the months and at the frequency specified above. If the effluent passes the test, do not repeat the test until the next test period. Submit test results along with complete copies of the test reports as received from the laboratory within 30 calendar days of availability to the WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102.
- (2) If the effluent fails the test, a multiple dilution test shall be performed within 30 calendar days, and biweekly thereafter, until one of the following conditions are met:
  - a. **THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS.** No further tests need to be performed until next regularly scheduled test period.
  - b. **A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.**



C. SPECIAL CONDITIONS (continued)

14. Whole Effluent Toxicity (WET) (continued)

(a) Test Schedule and Follow-Up Requirements (continued)

- (3) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
- (4) Additionally, the following shall apply upon failure of the third test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact WPCP, Planning Section to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPCP within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
- (5) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
- (6) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
- (7) All failing test results shall be reported to WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
- (8) When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.
- (9) All WET test results for the reporting period shall be summarized and submitted to DNR by the end of the following October.

(b) PASS/FAIL procedure and effluent limitations:

- (1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level;  $p = 0.05$ ) than that observed in the upstream receiving-water control sample. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.
- (2) To pass a multiple-dilution test:
  - a. the computed percent effluent at the edge of the zone of initial dilution, Acceptable Effluent Concentration (AEC), must be less than three-tenths (0.3) of the  $LC_{50}$  concentration for the most sensitive of the test organisms; or,
  - b. all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is an effluent limit violation.

(c) Test Conditions

- (1) Test Type: Acute Static non-renewal
- (2) Test species: *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
- (3) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

C. SPECIAL CONDITIONS (continued)

14. Whole Effluent Toxicity (WET) (continued)

(c) Test Conditions (continued)

(4) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(5) Single-dilution tests will be run with:

- a. Effluent at the AEC concentration;
- b. 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
- c. reconstituted water.

(6) Multiple-dilution tests will be run with:

- a. 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
- b. 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
- c. reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

## SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.

### Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16-h light, 8-h dark
Size of test vessel:	30 ml (minimum)
Volume of test solution:	15 ml (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$ )
Test acceptability criterion:	90% or greater survival in controls

### Test conditions for Pimephales promelas:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16-h light/ 8-h dark
Size of test vessel:	250 ml (minimum)
Volume of test solution:	200 ml (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$ )
Test Acceptability criterion:	90% or greater survival in controls

Total Toxic Organics (Note 1)

Acenaphthene	4-chlorophenyl phenyl ether
Acrolein	4-bromophenyl phenyl ether
Acrylonitrile	Bis (2-chloroisopropyl) ether
Benzene	Bis (2-chloroethoxy) methane
Benzidine	Methylene Chloride (dichloromethane)
Carbon Tetrachloride (tetrachloromethane)	Methyl Chloride (chloromethane)
Chlorobenzene	Methyl bromide (bromomethane)
1,2,4-trichlorobenzene	Bromoform (tribromomethane)
Hexachlorobenzene	Dichlorobromomethane
1,2-dichloroethane	Chlorodibromomethane
1,1,1-trichloroethane	Hexachlorobutadiene
Hexachloroethane	Hexachlorocyclopentadiene
1,1-dichloroethane	Isophorone
1,1,2-trichloroethane	Naphthalene
1,1,2,2-tetrachloroethane	Nitrobenzene
Chloroethane	2-nitrophenol
Bis (2-chloroethyl) ether	4-nitrophenol
2-chloroethyl vinyl ether	2,4-dinitrophenol
N-nitrosodi-n-propylamine	4,6-dinitro-o-cresol
Pentachlorophenol	N-nitrosodimethylamine
Phenol	N-nitrosodiphenylamine
Bis (2-ethylhexyl) phthalate	Phenanthrene
Butyl benzyl phthalate	1,2,5,6-dibenzanthracene (dibenzo(a,h)anthracene)
Di-n-butyl phthalate	Indeno (1,2,3-cd) pyrene
	(2,3-o-phenylene pyrene)
Di-n-octyl phthalate	Pyrene
Diethyl phthalate	Tetrachloroethylene
Dimethyl phthalate	Toluene
1,2-benzanthracene (benzo(a)anthracene)	Trichloroethylene
Benzo(a)pyrene (3,4-benzopyrene)	Vinyl Chloride (chloroethylene)
3,4-benzofluoranthene (benzo(b)fluoranthene)	Aldrin
11,12-benzofluoranthene (benzo(k)fluoranthene)	Dieldrin
Chrysene	Chlordane (technical mixture and metabolites)
Anthracene	4,4-DDT
1,12-benzoperylene (benzo(ghi)perylene)	4,4-DDE (p,p-DDX)
Fluorene	4,4-DDD (p,p-TDE)
2-chloronaphthalene	Alpha-endosulfan
2,4,6-trichlorophenol	Beta-endosulfan
Parachlorometa cresol	Endosulfan sulfate
Chloroform (trichloromethane)	Endrin
2-chlorophenol	Endrin aldehyde
1,2-dichlorobenzene	Heptachlor
1,3-dichlorobenzene	Heptachlor epoxide (BHC hexachlorocyclohexane)
1,4-dichlorobenzene	Alpha-BHC
3,3-dichlorobenzidine	Beta-BHC
1,1-dichloroethylene	Gamma-BHC
1,2-trans-dichloroethylene	Delta-BHC (PCB polychlorinated biphenyls)
2,4-dichlorophenol	PCB-1242 (Arochlor 1242)
1,2-dichloropropane (1,3-dichloropropane)	PCB-1254 (Arochlor 1254)
2,4-dimethylphenol	PCB-1221 (Arochlor 1221)
2,4-dinitrotoluene	PCB-1232 (Arochlor 1232)
2,6-dinitrotoluene	PCB-1248 (Arochlor 1248)
1,2-diphenylhydrazine	PCB-1260 (Arochlor 1260)
Ethylbenzene	PCB-1016 (Arochlor 1016)
Fluoranthene	Toxaphene